REMARKS/ARGUMENTS

Claims 1 and 16 have been amended. Claim 6 has been cancelled. Entry of the Amendments is respectfully requested.

The Examiner rejected claims 1 to 19 under 35 USC 103(a) of the Patent Act as being obvious in view of Cook (U.S. Patent No. 6,810,321) and Tzamaloukas (U.S. Patent No. 7,188,026). Applicants respectfully disagree for at least the following reasons.

Patentability of dependent claim 6

Claim 6 depends on claim 1, and recites "determining a distance traveled by each probe having a database entry with a most recent timestamp since a previous timestamp, and dividing the determined distance by the time between timestamps".

The method, as recited in dependent claim 6 and its base claim 1, includes obtaining and storing location information for a plurality of assisted global positioning system enabled cellular traffic probes, and determining the distance traveled by each probe based on the stored location information by dividing the distance traveled by the time between timestamps. The traffic flow for the monitored route segment is determined on the basis of the determined speed of the probes.

Applicants respectfully submit that none of the cited references describes or fairly suggests the step of the determining the speed of the probe based only on the location information obtained from the probe. By contrast, both references determine the traffic flow based on the instantaneous speed provided by the cellular device, which instantaneous speed represents the speed of the car at the time when the measurement was taken.

In particular, Cook describes a traffic monitoring system including cellular devices provided with a GPS receiver. The cellular devices communicate with a tower 20 and transmit data samples including the instantaneous speed of travel of the cellular devices (see column 3, lines 44 to 49). The data samples are input to an average calculator 47 to determine the average speed of all the cellular devices in a particular road segment (see column 6, lines 13 to 15).

Tzamaloukas describes a hierarchical floating car data network including a network of cars which are in direct communication with each other, and a selected subset of the cars which are in direct communication with a central server. Similar to Cook,

Tzamaloukas also provides the instantaneous speed of the car to the central server. For instance, column 14 lines 37 to 46 of Tzamaloukas describe:

> *....the processor module 138 is in communication with the sensor/OBD module 144. The sensor/OBD module 144 collects and processes data. For example the latitude, longitude, altitude, and vehicle speed and direction from GPS signals are collected and processed. If GPS signals are not available, enhanced dead reckoning is used to derive vehicle coordinates. Velocity, direction, and altitude may also be available from the odometer, a compass, and a gyroscope.*

There is a distinct advantage realized by the features of claim 6. Determining the speed of the probes based only on the location information obtained from the probe, allows for more accurate results because the instantaneous speed measured by the cellular device does not accurately reflect the average speed between two points especially if the road segment monitored is congested, in which case the car may be slowing, or accelerating.

Accordingly, the combination of Cook and Tzamaloukas does not disclose determining the speed of each of the plurality of cellular traffic probes based on the stored location including determining a distance traveled by each probe having a database entry with a most recent timestamp since a previous timestamp, and dividing the determined distance by the time between timestamps, as recited in claim 6.

Patentability of dependent claims 3 and 18

Claims 3 and 18 recite that obtaining the location information includes requesting location information from a location based service platform.

In Cook, data samples are sent as long as the cellular phone is ON (column 4, lines 28 to 32). Therefore, in Cook the information sending process is initiated by the cellular phone.

Similarly, Figures 17A to 18B, and column 20, lines 49 to 58 of Tzamaloukas describe that when the beacon timer expires (step 258 of Figure 17A), the on-board equipment sends a packet to Radio. Therefore, in Tzamaloukas the information sending process is initiated by the on-board equipment.

By contrast, claims 3 and 18 recite that the location information is only sent when requested and needed, which reduces unnecessary bandwidth usage, and at the same time prolongs battery life.

Applicants respectfully submit that claims 3 and 18 cannot be obvious since the features recited therein are not disclosed or fairly suggested by the Cook or Tzamaloukas references.

Patentability of independent claims 1 and 16, and their respective dependent claims

Applicants have amended claim 1 to incorporate therein the features of originally filed claim 6, which recites novel and non-obvious matter, as discussed above. For the Examiner's convenience, amended claim 1 is reproduced below, where underlined text is added text relative to the currently pending claim 1, as rejected by the Examiner:

> A method of determining the flow of traffic on a monitored route segment comprising:
>
> obtaining and storing location information for a plurality of assisted global positioning system enabled cellular traffic probes;
>
> determining the speed of each of the plurality of cellular traffic probes based only on the stored location including determining a distance traveled by each probe having a database entry with a most recent timestamp since a previous timestamp, and dividing the determined distance by the time between timestamps;
>
> selecting a subset of the plurality of cellular traffic probes corresponding to probes having a location in the monitored route segment; and
>
> determining the traffic flow for the monitored route segment on the basis of the determined speed of the probes in the selected subset.

In addition to the features of claim 6, claim 1 recites "obtaining and storing location information for a plurality of assisted global positioning system enabled cellular traffic probes". The Examiner correctly states that Cook does not disclose the use of A-GPS. However, the Examiner turns to column 9 lines 11 to 28 of Tzamaloukas to find this feature.

Applicants respectfully disagree at least for the following reasons:

1) Tzamaloukas reads speed data from an auxiliary speed sensor (column 7, line 7);

2) Tzamaloukas uses a custom, non-cell-phone version of A-GPS which enables a vehicle that is unable to receive GPS signals to obtain assistance in determining its position from another nearby vehicle that is able to receive GPS signals. This approach is distinctly different from the general definition and use of A-GPS in the cell-phone industry, and in the embodiments of the present application. Applicant refers the Examiner to http://en.wikipedia.org/wiki/GPS_Phone which emphasizes the use of A-GPS by the cell-phone industry and the improvements in the performance of the GPS function. Tzamaloukas uses the term A-GPS in a different way; he uses it to mean that a vehicle that is unable to receive GSP signals can get assistance in locating its position from another nearby vehicle that is able to receive GPS signals.

3) In Tzamaloukas, the speed and location information is sent to the central server from the on-board radio module (WLAN / WWAN) equipment shown in Figure 3 (see column 5, lines 5 to 8, 32 to 41, and column 9 lines 35 to 48), and not by the A-GPS system as recited in claim 1 and as shown in Figure 1 of the present application.

Furthermore, Tzamaloukas describes the use of a custom version of A-GPS data in communication between cars only, in order to determine an approximate location of the car that does not receive GPS signals (see column 9 lines 15 to 24, and lines 30 to 35). This is the opposite of determining the speed of the car through the location information obtained from the A-GPS, as recited in claim 1.

Moreover, even if the A-GPS teachings of Tzamaloukas is combined with the system of Cook, the result would be a system that sends instantaneous speed to the central server. Thus, the combination suggested by the Examiner would not result in the claimed invention.

Accordingly, the combination of Tzamaloukas and Cook fails to teach all the elements of amended claim 1.

Independent claim 16 has been amended similar to claim 1, and Applicants re-iterate the same arguments in support of its patentability.

Withdrawal of the rejections under 35 USC 103(a) against independent claims 1 and 16 and their respective dependent claims, is respectfully requested.

The Commissioner is hereby authorized to charge any additional fees, and credit any over payments, to Deposit Account No. 501593, in the name of Borden Ladner Gervais LLP.

Respectfully submitted,

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